STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

February 6, 2003

Mr. Roy Schepens
Office of River Protection
United States Department of Energy
P. O. Box 450, MSIN: H6-60
Richland, Washington 99352

Mr. Edward S. Aromi, Jr.
CH2M Hill Hanford Group, Inc.
P.O. Box 1500, MSIN: H6-63
Richland, Washington 99352

Dear Messrs. Schepens and Aromi:

Re: Notice of Non-Compliance for Tank System Inspection and Repair Program in Hanford Double-Shell Tank Farms

On November 19, 2002, the Washington State Department of Ecology (Ecology) conducted an inspection of Washington Administrative Code (WAC) and Code of Federal Regulation (CFR) requirements for owner/operator inspections of hazardous waste tank systems, including remedying deficiencies discovered through tank system inspection programs. Specifically, Ecology's inspection focused on WAC and CFR tank system inspection requirements in the AY, AZ and SY double-shell tank farms (DSTs). As a result of Ecology's inspection, the United States Department of Energy-Office of River Protection (USDOE-ORP) and its contractor, CH2M Hill Hanford Group Incorporated (CHG), have incurred violations of WAC and CFR inspection and equipment maintenance requirements, as well as the additional concern listed below.

Ecology finds these violations particularly troubling considering the substantial history of non-compliance by ORP and its contractors for the same and similar violations (see Concerns below). In addition, ORP and CHG have known of many of the deficiencies discovered by Ecology since early 2002.

Throughout January 2003, Ecology met with ORP and CHG representatives to discuss the violations cited in this Notice of Non-Compliance and resolution to them. As a result of these meetings, Ecology elects to withhold formal enforcement (orders and/or penalties) against ORP and CHG for the violations cited below pending resolution to them as described in the Corrective Measures contained within this Notice.

VIOLATIONS:

1) **40 CFR 265.195, Inspections by reference from WAC 173-303-400 and WAC 173-303-640 Tank Systems.**

CHG and ORP failed to ensure the leak detection systems for the AY and AZ double-shelled tanks are operating according to design as required per 40 CFR 265.195 (a)(3) and WAC 173-303-640(6)(b)(ii).

Functional testing of the leak detection systems for AY and AZ tanks is limited to testing of above-ground electrical circuitry only and does not include testing of the actual leak detection equipment installed within each AY and AZ DST. This deficiency and other deficiencies with the AY/AZ leak detection system were known to CHG and ORP since January 2002; however, they remain deficient. An ORP safety assessment (02-TOD-044) notes that the AZ/AY leak detectors have not been functionally tested since their installation over 30 years ago, that due to their configuration they cannot be tested, and that the system could fail in a manner that would not provide an indication of a leak in AY or AZ tanks annuli.

Additional deficiencies with the system include: (1) The system has a single point of failure (i.e. system not constructed to prevent failure of one component from resulting in failure of the entire system). (2) The system does not have any indicators to demonstrate the system is energized. (i.e. the control panels in the 801 AY and AZ control rooms do not indicate if the system is working or not). (3) The in-tank components of the leak detection system within AY and AZ tanks are not intrinsically safe (i.e. not protected from sparks within the tanks' atmosphere).

2) **40 CFR 265.15 General Inspection Requirements and WAC 173-303-320 General Inspection (resolving malfunctions).**

CHG and ORP failed to remedy malfunctioning or inoperable leak detection and tank monitoring equipment discovered through inspections conducted in the AY, AZ and SY tank farms as required per 40 CFR 265.15 (c) and WAC 173-303-320 (2)(c).

Daily tank system inspection logs reveal numerous discoveries of malfunctioning tank system monitoring equipment that remained uncorrected for weeks and months at a time. Although CHG procedures have been revised to address this deficiency, a backlog of malfunctioning equipment remains. CHG's revised system for identifying, tracking, and scheduling repair to malfunctioning monitoring equipment relies on a cumbersome interaction between various procedures and operational instructions that may not result in resolution to malfunctioning monitoring equipment repair in a timely manner.

3) **40 CFR 265.15 General Inspection Requirements and WAC 173-303-320 General Inspection (recordkeeping).**

CHG and ORP failed to adequately document remedies to equipment malfunctions discovered during inspections as required per 40 CFR 265.15 (d) and WAC 173-303-320 (2)(d).

Documentation of repairs to malfunctioning monitoring equipment has been vague or non-existent. CHG's revised system for documenting resolution to malfunctioning monitoring equipment relies on a cumbersome interaction between various procedures and operational instructions that may not result in adequate recordkeeping of repairs to malfunctioning equipment.

CONCERNS:

1) There is a significant long-term history of Resource Conservation and Recovery Act (RCRA) violations at Hanford tank farms for non-compliance with hazardous waste tank systems inspection and leak detection requirements. Within the previous five year period the United States Department of Energy and its contractors have incurred the following violations of regulatory requirements for failure to inspect tank system monitoring equipment, or to provide and maintain leak detection systems within Hanford tank systems. The following violations are listed by enforcement issuance date:

   July 8, 1998: Failure to meet 40 CFR 265.195 requirements to develop and conduct an inspection schedule sufficient to detect or respond to equipment deficiencies or to correct deficiencies if detected in SY tank farm. Failure to provide adequate leak detection in hazardous waste tanks as required per 40 CFR 265.193. Failure to document data gathered from leak detection monitoring equipment per 40 CFR 265.195(c).

   February 2, 2001: Failure to meet 40 CFR 265.195 to adequately inspect tank system monitoring equipment in Hanford tank systems.

   August 8, 2002: Failure to meet 40 CFR 265.193 requirements to provide and operate tank systems with leak detection.

In order to correct the violations identified in this Notice of Non-Compliance, please complete the following corrective measures within the time frames specified. Failure to correct the violations described in this letter may result in the issuance of an administrative order and/or penalties per Revised Code of Washington (RCW) 70.105.080. Please be advised that should Ecology determine a penalty is warranted due to failure to correct the violations as described in this letter, such penalty may be assessed based on the time the violations first occurred. A request for additional time to complete the corrective measure identified in this Notice of Non-Compliance must be in writing, describe the reasons for the request for additional time, and received by me for consideration no later than April 18, 2003.

CERTIFICATE OF COMPLIANCE

As a legal representative of the United States Department of Energy, I certify, to the best of my knowledge, the completion of items requested by the Washington State Department of Ecology on February 6, 2003, with regard to owner/operator inspections of hazardous waste tank systems and remedying deficiencies discovered through tank system inspection programs on the Hanford Site, Facility ID number WA 7890008967 as shown below.

COMPLIANCE STATUS

Corrective Measure	Date Due	Date Complete	Initials	Comments
1	12/31/03			
2	Completed	N/A		
3	Completed	N/A		

Signature, USDOE-RL Representative Date

Equipment Considered To Be "Environmental" For RCRA/WAC 173-303-640 Purposes (Reference OSD-T-151-00032 Section 10, Tank Inspection Requirements)

- DST primary tank level instrumentation
- DST annulus leak detection instrumentation
- Transfer line leak detection (during transfer)
- Pit/diversion box leak detection
- Catch tank and DCRT level/leak detection instrumentation
- Cathodic protection
- DST waste temperature
- DST primary vapor space pressure
- SST level and temperature per SST Dangerous Waste Inspection Schedules (OSD-032, Section 10.2)

Prioritization Process

1. Operator discovers issue during rounds and assigns Equipment Deficiency List (EDL) number per TFC-OPS-OPER-C-08, Shift Routines and Operating Practices.
2. Shift supervision reviews round sheets and generates Problem Evaluation Request per TFC-OPS-OPER-C-08 and TFC-ESHQ-Q-C-C-01, Problem Evaluation Request. The PER is evaluated against OSD-T-151-00031, Operating Specifications For Tank Farm Leak Detection and Single-Shell Tank Intrusion Detection, and OSD-T-151-00032, Environmental Operating Specifications River Protection Project
3. PER is evaluated by the screening team and reviewed at Senior Leadership Morning Meeting. PER is assigned as a Track Until Finished and assigned to the appropriate facility manager. The environmental organization is represented at the morning leadership meeting. The screening team also verifies that the EDL number is entered on the PER.
4. Facility manager evaluates the PER and generates a Job Control System (JCS) work package per TFC-OPS-MAINT-C-01, Tank Farm Contractor Work Control.
5. The work package is validated as a work package or a Routine Work Request (RWR) and receives a JCS number (2E-03-00XXX/W for example). The JCS number for the work package is entered into the PER form and the PER is changed to Trend Only. If the PER results in an RWR, the PER retains the Track Until Finished (TUF) designation. The change of status is reviewed by the screening team and the Senior Leadership meeting.
6. The facility manager reviews the JCS work package and assigns appropriate priority based on facility needs. Environmental equipment receives a 2.1 or 2.2 priority per TFC-OPS-MAINT-C-01.
7. Level and leak detection instrumentation is prioritized based on the requirements of OSD-T-151-00031.
8. Deficiencies are placed on the 12-week rolling schedule per HNF-IP-0842, Volume 2, Section 2.7. Environmental concerns with a time requirement for repair (leak detection, level detection) are placed on the schedule consistent with the requirements of OSD-31.
9. When completed, the JCS package becomes a permanent part of the tank farm operating record and is scanned into the RMIS system.